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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 27 APR 2001

WFO PCT

Applicant's or agent's file reference 17749	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/20971	International filing date (day/month/year) 10 SEPTEMBER 1999	Priority date (day/month/year) 11 SEPTEMBER 1998
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant CALIFORNIA INSTITUTE OF TECHNOLOGY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

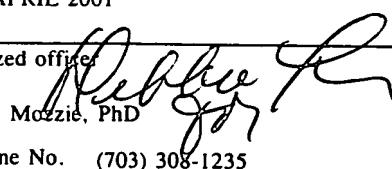
2. This REPORT consists of a total of 4 sheets.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand <u>20 MAY 2000</u> 11 April 2000	Date of completion of this report 05 APRIL 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer  F.T. Mozzie, PhD Telephone No. (703) 308-1235

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/20971

I. Basis of the report

1. With regard to the elements of the international application:*

 the international application as originally filed the description:

pages 1-24

, as originally filed

pages NONE

, filed with the demand

pages NONE

, filed with the letter of

 the claims:

pages 25-28

, as originally filed

pages NONE

, as amended (together with any statement) under Article 19

pages NONE

, filed with the demand

pages NONE

, filed with the letter of

 the drawings:

pages 1-6

, as originally filed

pages NONE

, filed with the demand

pages NONE

, filed with the letter of

 the sequence listing part of the description:

pages NONE

, as originally filed

pages NONE

, filed with the demand

pages NONE

, filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is: the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in printed form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. The amendments have resulted in the cancellation of: the description, pages NONE the claims, Nos. NONE the drawings, sheets fig NONE5. This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/20971

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)

Claims 1-24 YES
Claims NONE NO

Inventive Step (IS)

Claims 1-24 YES
Claims NONE NO

Industrial Applicability (IA)

Claims 1-24 YES
Claims none NO**2. citations and explanations (Rule 70.7)**

Claims 1-24 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the subject matter being claimed and its use in medicine.

----- NEW CITATIONS -----
NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/20971

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): A61K 38/00, 38/04, 38/08; C12Q 1/68; C12N 5/00, 506 and US Cl.: 435/6, 325; 514/34; 530/300, 323, 328, 329, 330; 536/24.3, 24.5

INTERNATIONAL SEARCH REPORT

International application No. PCT/US99/20971

A. CLASSIFICATION OF SUBJECT MATTER.

IPC(6) :A61K 38/00, 38/04, 38/08; C12Q 1/68; C12N 5/00, 5/06
 US CL :435/6, 325; 514/34; 530/300, 323, 328, 329, 330; 536/24.3, 24.5
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/6, 325; 514/44; 530/300, 323, 328, 329, 330; 536/24.3, 24.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 USPATFULL, MEDLINE, CAPLUS, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	TRAUGER et al. Recognition of DNA by Designed Ligands at Subnanomolar Concentrations. Nature. 08 August 1996, Vol. 382, pages 559-561, see the entire document.	1-24
A	BENZ et al. HER2/Neu and the Ets Transcription Activator PEA3 Are Coordinately Upregulated in Human Breast Cancer, Oncogene. 1997, Vol. 15, pages 1513-1525, see the entire document.	1-24
A	WADE et al. Design of Peptides That Bind in the Minor Groove of DNA at 5'-(A,T)G(A,T)C(A,T)-3' Sequences by a Dimeric Side-by-Side Motif. J. Am. Chem. Soc. 1992, Vol. 114, pages 8783-8794, see the entire document.	1-24

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means		
P document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
30 DECEMBER 1999	21 JAN 2000

Name and mailing address of the ISA/US
 Commissioner of Patents and Trademarks
 Box PCT
 Washington, D.C. 20231
 Facsimile No. (703) 305-3230

Authorized officer
 F.T. Moyle, PhD
 Telephone No. (703) 305-4508

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/20971

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WHITE et al. Effects of the A*T/T*A Degeneracy of Pyrrole-Imidazole Polyamide Recognition in the Minor Groove of DNA. Biochemistry, 1996, Vol. 35, pages 12532-12537, see the entire document.	1-24
A	WHITE et al. On the Pairing rules for Recognition in the Minor Groove of DNA by Pyrrole-imidazole Polyamides. Chemistry & Biology. 1997, Vol. 4, No. 8, pages 569-578, see the entire document.	1-24
A	CHANG et al. ESX: A Structurally Unique Ets Overexpressed Early During Human Breast Tumorigenesis. Oncogene. 1997, Vol. 14, pages 1617-1622, see the entire document.	1-24
A	BAERT et al. Expression of the PEA3 Group of ETS-related Transcription Factors in Human Breast-Cancer Cells. Int. J. Cancer. 1997, Vol. 70, pages 590-597, see the entire document.	1-24
A	BOSHER et al. The Developmentally Regulated Transcription Factor AP-2 Is Involved in c-erbB-2 overexpression in Human Mammary Crcinoma. Proc. Natl. Acad. Sci. USA. January 1995, Vol. 92, pages 744-747, see the entire document.	1-24
A	MARKISCH et al. Antiparallel Side-by-Side Dimeric Motif for Séquence-Specific Recognition in the Minor Groove of DNA by the Designed Peptide 1-Methylimidazole-2-Carboxamide Netropsin. Proc. Natl. Acad. Sci. USA. August 1992, Vol. 89, pages 7586-7590, see the entire document.	1-24